

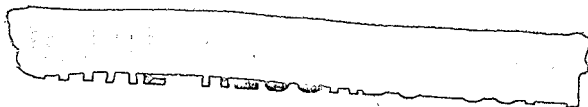
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PHOTOGRAPHIC INTELLIGENCE REPORT



OIL FIELD AND REFINERY COMPLEX

SA-ERH-TU, CHINA

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Declass Review by NIMA / DOD

GROUP 1  
Excluded from automatic  
downgrading and declassification

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DATE JULY 1966

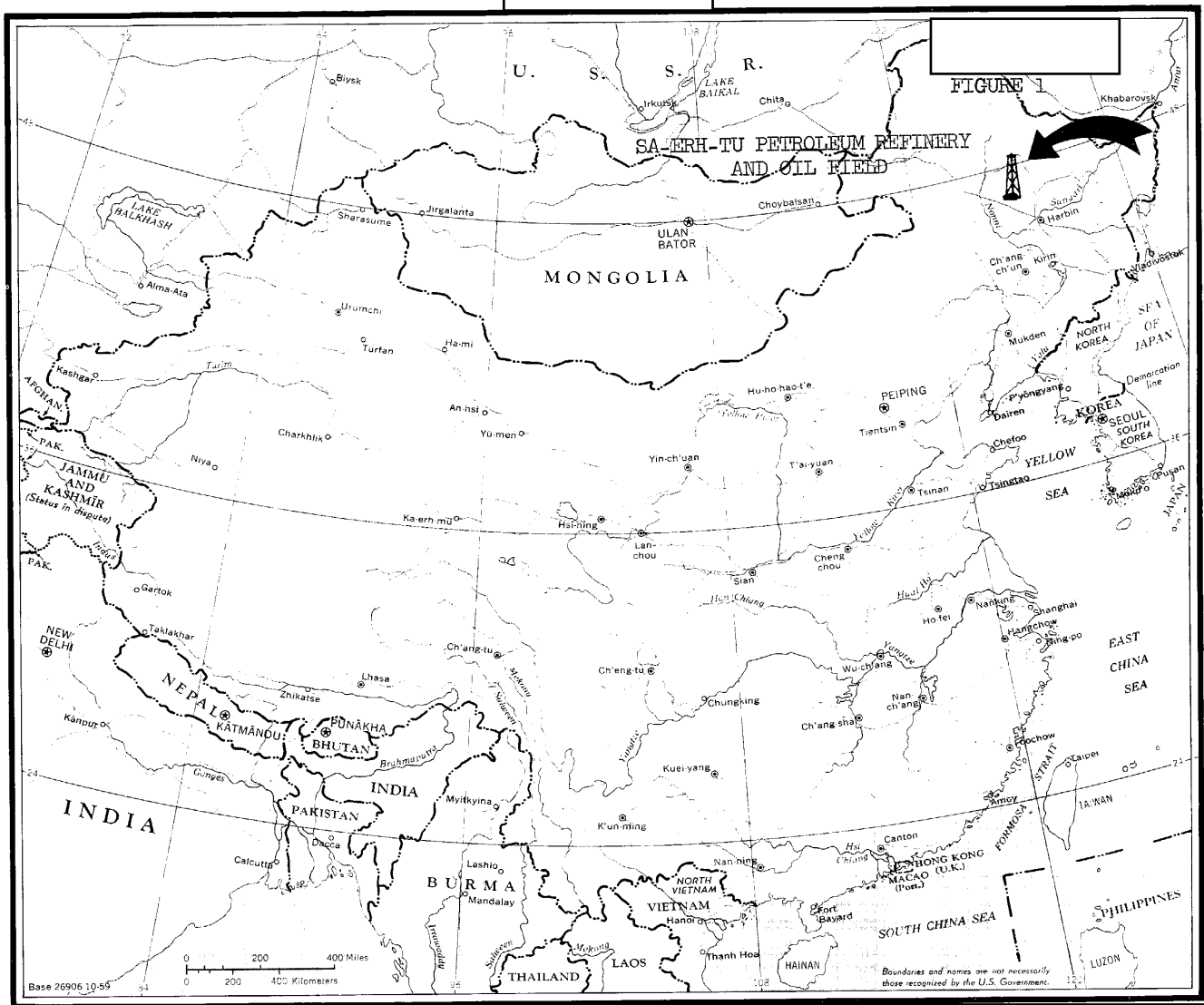
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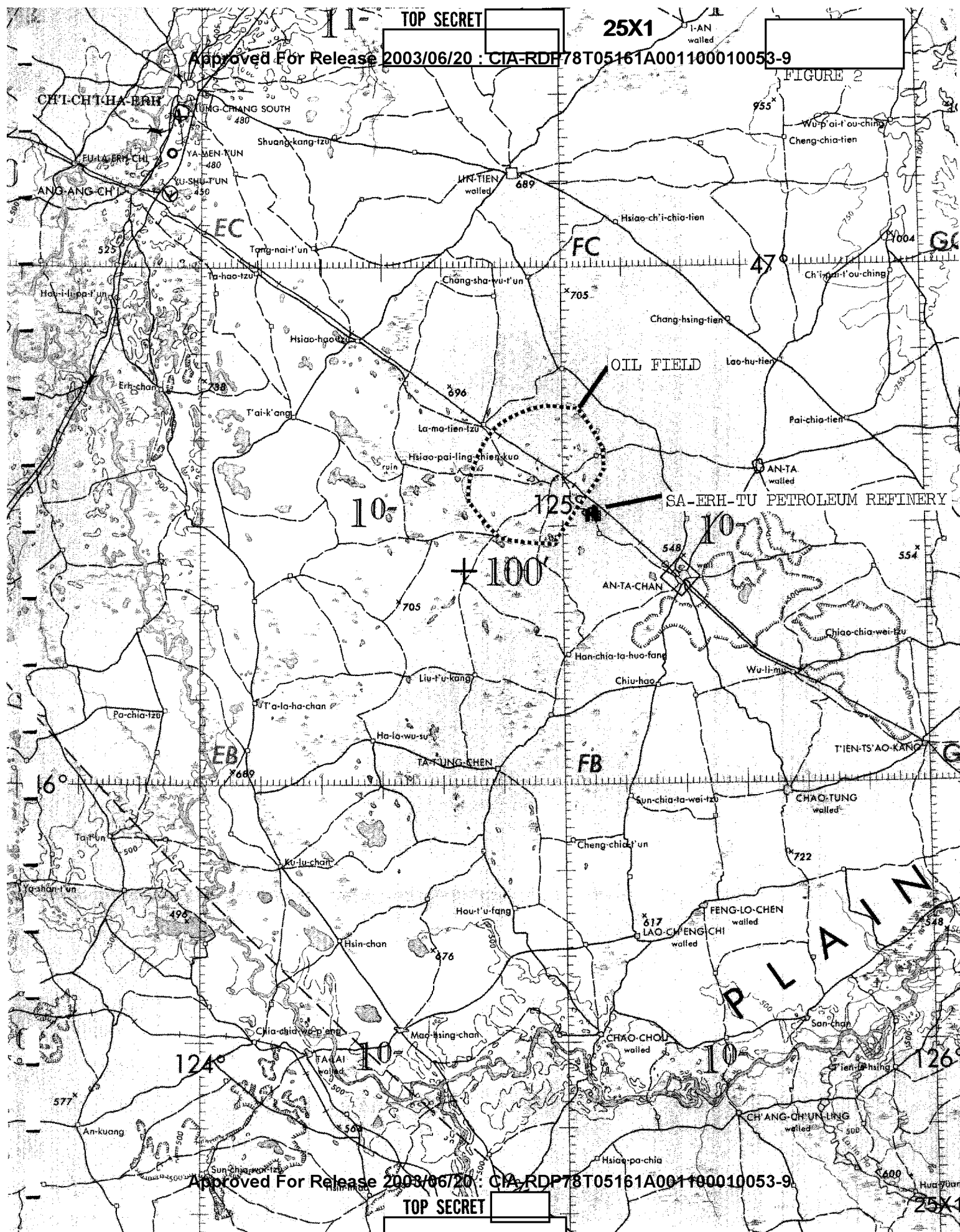
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OIL FIELD AND REFINERY COMPLEX  
SA-ERH-TU, CHINA

A major oil field and refinery complex is located northwest of Ha-erh-pin (Harbin) in Heilungkiang Province, China. The center of the complex is at Sa-erh-tu, 46 36N - 125 00E, 18 nm northwest of An-ta-chan and 20 nm west of An-ta (Figures 1 and 2). These three place names, as well as the name used in numerous Communist Chinese open source publications, Ta-ching, have all been applied to this complex.

The complex consists of an extensive oil field, a large refinery, a possible crude oil processing plant and two rail served tank farms. Figure 4 shows the geographic relationship of these areas.

OIL FIELD (Figures 2, 3, and 4)

Situated on both sides of the rail line between Ang-ang-ch'i and Ha-erh-pin, the oil field covers an area of over 100 square miles and contains approximately 450 well locations. These wells are laid out in parallel rows orientated roughly west-northwest/east-southeast (Figure 4). The spacing between rows varies from approximately 550 to 2,200 feet while the distance between wells within a row varies from 750 to 1,600 feet with 1,100 feet an average separation.

At least eight small POL storage areas or gathering tank locations are dispersed throughout the field. In addition, there are a number of small lakes in the field area.

Comparison of [redacted] [redacted] Figures 3 and 4) indicates that the field has approximately doubled in size.

POSSIBLE CRUDE OIL PROCESSING PLANT (Figure 5)

This rail served plant is situated at the northwest edge of the complex at approximate coordinates 46 46N - 124 40E. In the center of the plant is an unidentified processing unit with a series of tall towers; the unit is connected by pipeline to an adjacent furnace building or steamplant. A tankcar loading/unloading facility, 3 large and approximately 15 medium to small POL tanks, and associated buildings are also within the plant area. Construction of this plant began [redacted] and was probably completed [redacted]

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### TANK FARMS (Figures 6 and 7)

Two rail served tank farms, designated no. 1 and 2, are located within the oil field complex at approximate coordinates 46 40N - 124 47E and 46 34N - 124 01E, respectively. Tank farm no. 1 (Figure 6) consists primarily of 12 large and three small POL tanks, and a tankcar loading/unloading facility. Tank farm no. 2 contains eight medium and two small POL tanks, a tankcar loading/unloading facility, and five open storage pits.

### REFINERY (Figures 8 through 17)

The refinery is located at the southern end of the complex at 46 32N - 125 06E. It covers an area of approximately 48,000,000 square feet between a small lake to the west and the Ang-ang-ch'i/Ha-erh-pin rail line to the east. Several rail spurs and a small railyard serve the refinery.

Refining facilities consist of two distillation units, a probable thermal cracking unit, a probable coking unit under construction, and two unidentified refining units. Associated facilities include a large thermal power plant, two tankcar loading and unloading facilities, a steamplant, water treatment facilities, and POL tank storage. These are identified on Figure 14.

Several ground shots from open sources which can be correlated with aerial photography have been included (Figures 15 - 17). Figure 15 shows most of the main refining area while Figures 16 and 17 are photos of the probable multi-stage distillation unit and the probable atmospheric-vacuum distillation unit, respectively.

25X1 [redacted] measurements were made of each of the different POL tank types as well as the heights of towers or stacks within the individual refining units. A photo identifying the tank or unit measured and a sketch showing the resulting measurements have been included (Figures 11 and 12). These measurements were made by the NPIC Technical Intelligence Division and are considered to be accurate within + 10 feet

25X1 [redacted] Although the image quality of the mission is good, the heights were measured by the shadow method and many of the shadows fall across pipelines or adjacent buildings; consequently, the reliability of these measurements is limited. In addition, many measurements of towers or stacks could not be made due to inability to locate precisely the base of the shadow.

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The estimated capacity of each type of POL tank and the total capacity of all tanks of each type are given in the following table. Tank capacities are expressed in terms of American barrels (42 American gallons). The accuracy of these capacities is dependent upon the accuracy of the diameter and height measurements (+ 10 feet [redacted]). No attempt has been made to differentiate between crude and petroleum products storage.

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Area	*Capacity (bbls.)	No. of Tanks	Total Capacity (bbls.)
1	6,000	8	48,000
2	13,000	10	130,000
3	58,000	2	116,000
4	51,000	3	153,000
5	12,000	6	72,000
6	17,000	18	306,000
7	3,000	10	30,000
**8	2,000	42	**84,000
9	10,000	8	80,000
10	9,000	6	54,000
		TOTAL	1,073,000

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\* Rounded off to closest 1,000 American barrels.

\*\* No height measurement possible; assuming tank is 10-15 feet high, its approximate capacity is 2,000 American barrels.

All available photographic coverage during the period [redacted] was examined in order to follow the construction of the refinery. Enlargements from the best coverage have been included (Figures 8 - 14). The following discussion describes the significant changes and activity indicators by mission:

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(1) [redacted] The refinery was in a very early stage of construction. A number of construction buildings were present and construction of the rail spurs serving the area had begun.

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(2) [REDACTED] Figure 8 - A small number of POL tanks and buildings had been constructed. In addition, the probable thermal cracking unit was under construction.

(3) [REDACTED] Figure 9 - Additional POL tanks had been constructed; the probable multi-stage distillation unit and the probable thermal cracking unit were in a mid-stage of construction. Construction of the steamplant had begun.

(4) [REDACTED] Figure 10 - By this date, a major portion of the construction of the refinery was complete and it was in operation. The probable multi-stage distillation unit and the probable thermal cracking unit appeared complete. The probable atmospheric-vacuum distillation unit was in a mid-stage of construction while the unidentified refining units nos. 1 and 2 were in a mid and early stage of construction, respectively. A large refining unit, subsequently identified as a probable coking unit under construction, was observed. A majority of the POL tanks were complete. Operation of the refinery was indicated by smoke coming from the probable thermal cracking unit and water vapor coming from the steamplant, from the cooling towers south of the refining area, and from the thermal power plant area. In addition, a flame was observed at the flare tower.

(5) [REDACTED] Figure 11 - The two unidentified refining units appeared complete at this time. A second cooling tower associated with the thermal power plant and two POL tanks adjacent to the probable coking unit had been constructed while ten small POL tanks were removed from the tank storage area at the north end of the refinery.

(6) [REDACTED] Figure 13 - A high level of operation was indicated by water vapor coming from the thermal power plant and its cooling towers, from several points near the probable coking unit, from the probable atmospheric-vacuum distillation unit, from unidentified unit no. 2, and from a bank of cooling towers south of the refining area. Flame and smoke were also observed coming from the flare tower.

(7) [REDACTED] Figure 14 - This mission revealed the construction of a conveyor and rail served storage building associated with the probable coking unit. The appearance of this conveyor indicates it will be used to remove a bulk materiel from the unit. Additional POL tank construction directly east of this unit was noted. An extension of the thermal power plant building since the previous mission will apparently double its output. Operation of the refinery was indicated by smoke and water vapor coming from the thermal power plant area and water vapor coming from the cooling towers south of the refining area.



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Rail activity within the refinery and in the adjacent rail yard [redacted]  
[redacted] is also indicative of a significant  
level of operation at the refinery.

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# REFERENCES

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## MAPS AND CHARTS

General Locator Map, China - 29606 (UNCLASSIFIED)

Operational Navigation Chart, F-9, 3rd Classified Edition, 12 July 1965  
(CONFIDENTIAL)

## GROUND PHOTOS

Figure 15 - Chinese Industrial Photo News (J), No. 61, Tokyo, 1 February 1966  
(UNCLASSIFIED) and Far Eastern Economic Review, 6 January 1966, page 6  
(UNCLASSIFIED)

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Figure 16 - Ta Kung Pao (Ch), Pei-ching, 1 January 1966, (UNCLASSIFIED)

Figure 17 - Kung-jen Jih-pao (Ch), Pei-ching, 8 December 1965 (UNCLASSIFIED)

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FIGURE 3



SA-ERH-TU PETROLEUM REFINERY  
AND OIL FIELD  
SA-ERH-TU, CHINA  
46 36N - 125 00E

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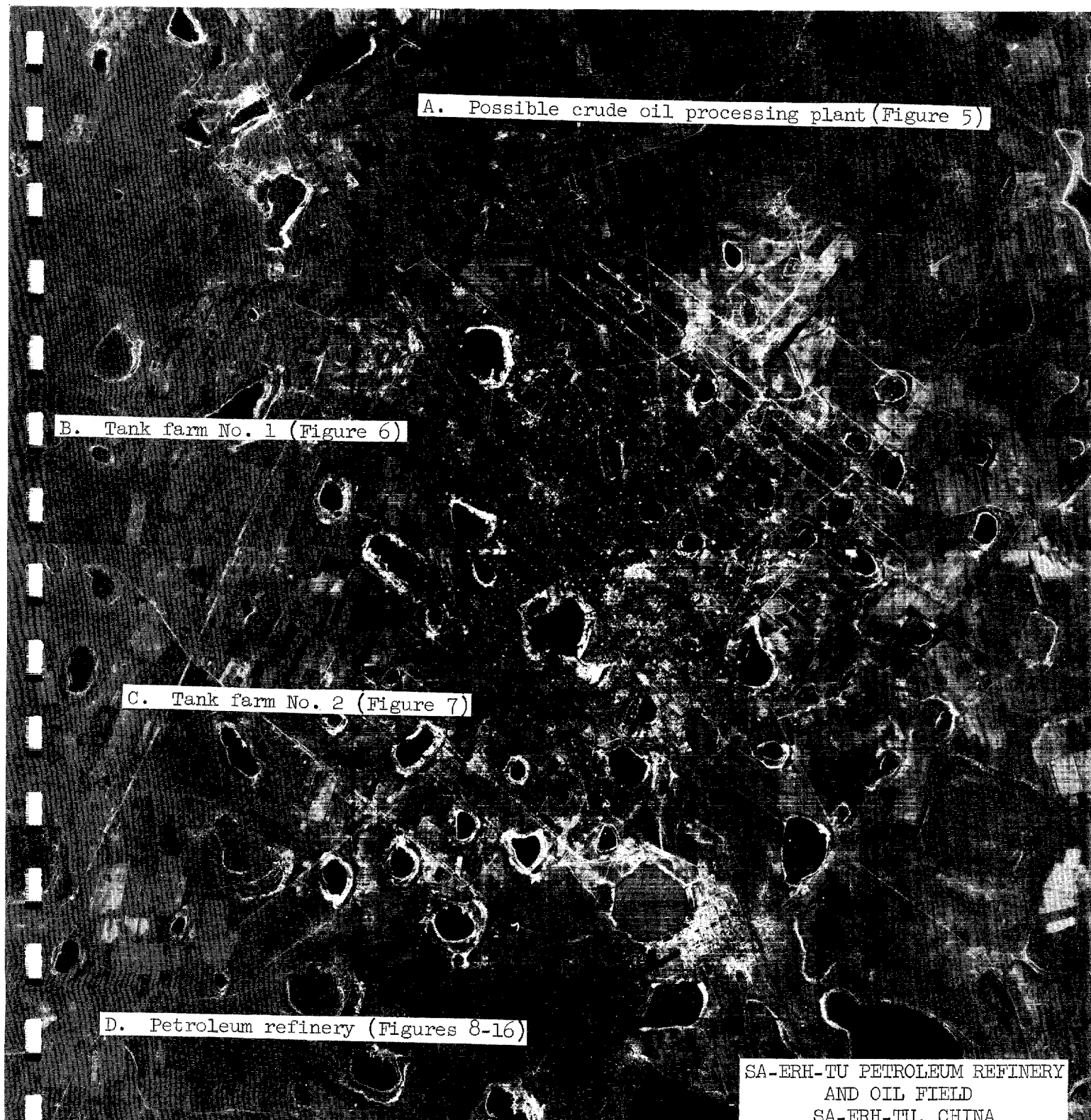
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FIGURE 4



SA-ERH-TU PETROLEUM REFINERY  
AND OIL FIELD  
SA-ERH-TU, CHINA  
46 36N - 125 00E

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FIGURES 5 - 7

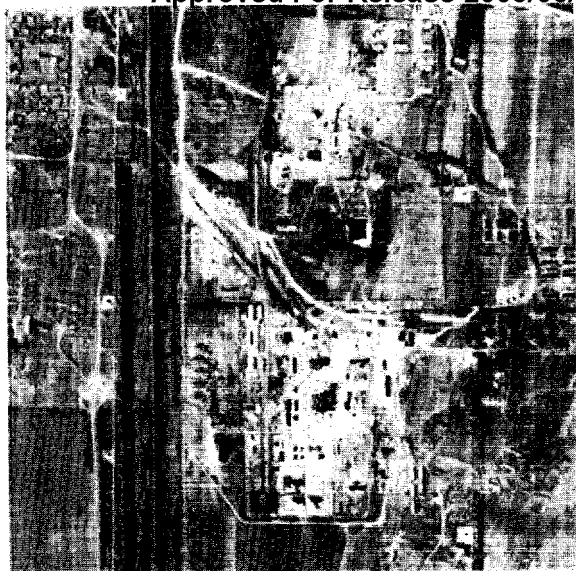


Figure 5 Possible crude oil processing plant

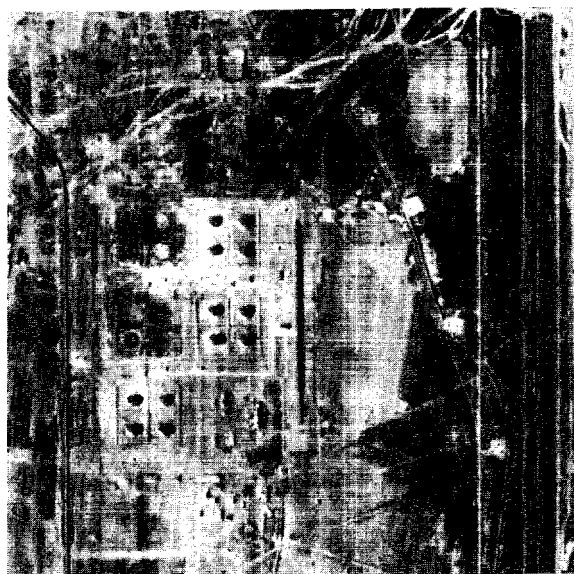


Figure 6 Tank farm No. 1



Figure 7 Tank farm No. 2

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FIGURE 8



SA-ERH-TU PETROLEUM REFINERY  
SA-ERH-TU, CHINA  
46 32N - 125 06E

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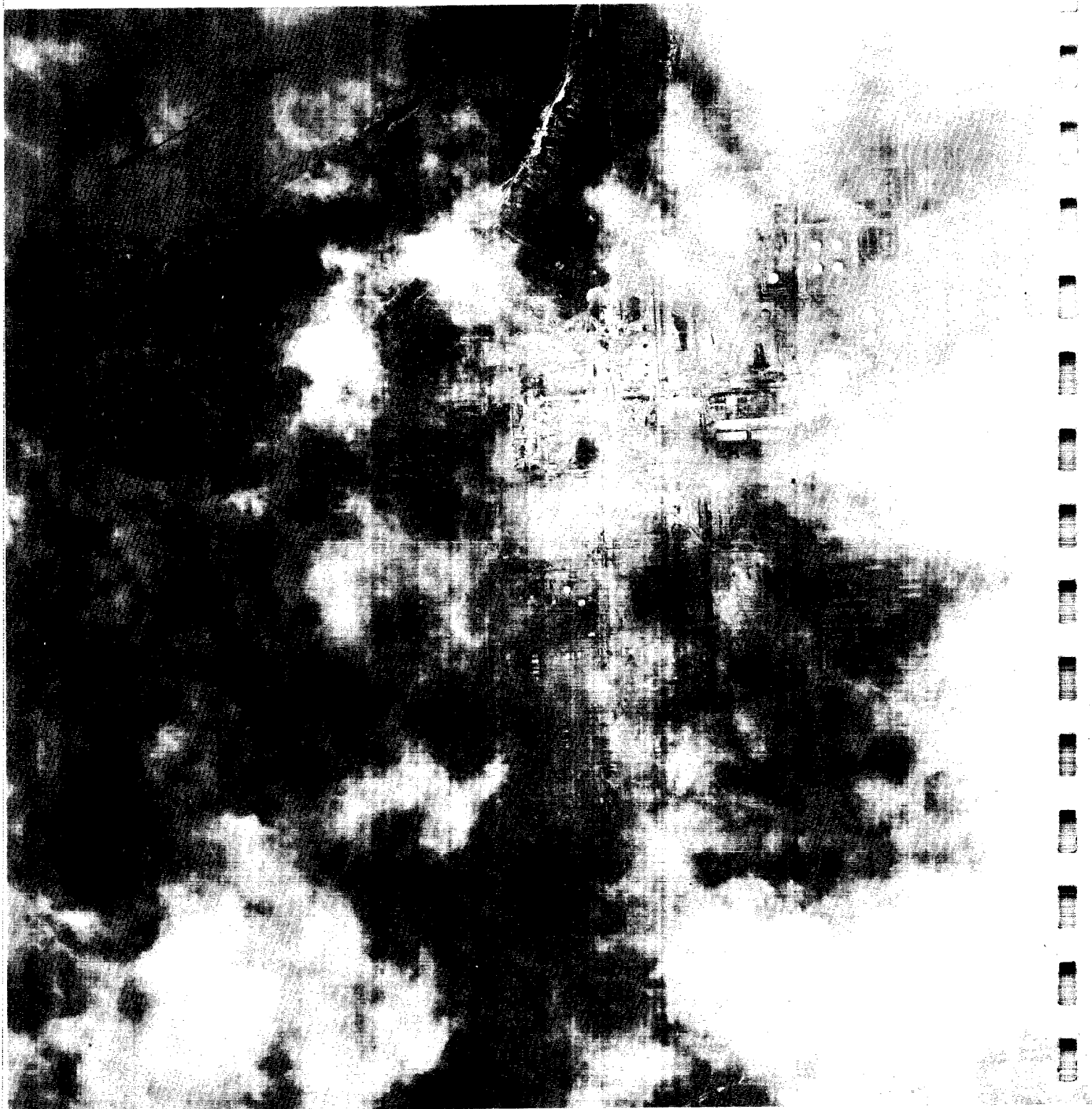


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FIGURE 9



SA-ERH-TU PETROLEUM REFINERY  
SA-ERH-TU, CHINA  
46 32N - 125 06E

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FIGURE 10

SA-ERH-TU PETROLEUM REFINERY  
SA-ERH-TU, CHINA  
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FIGURE 11



SA-ERH-TU PETROLEUM REFINERY  
SA-ERH-TU, CHINA  
46 32N - 125 06E

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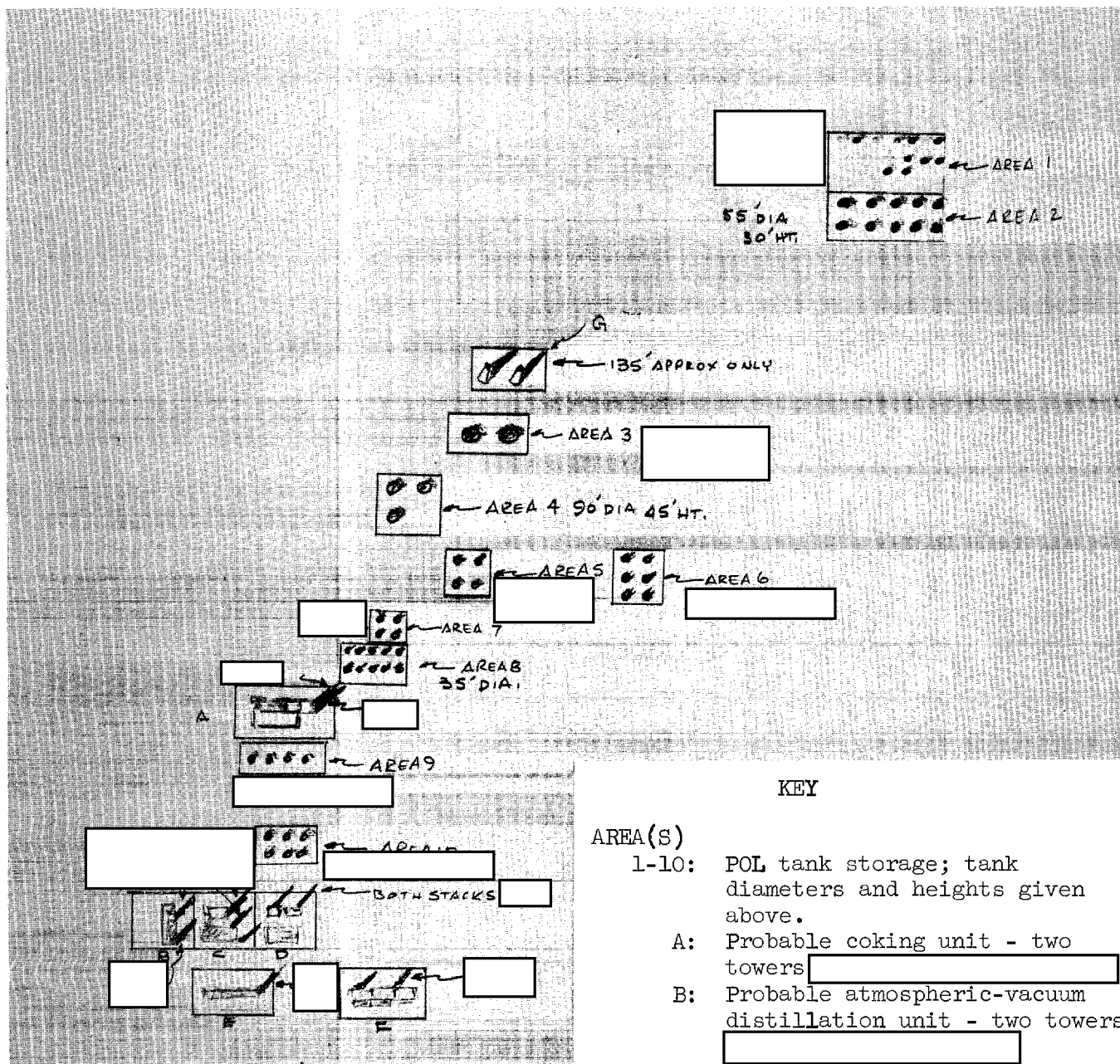
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FIGURE 12

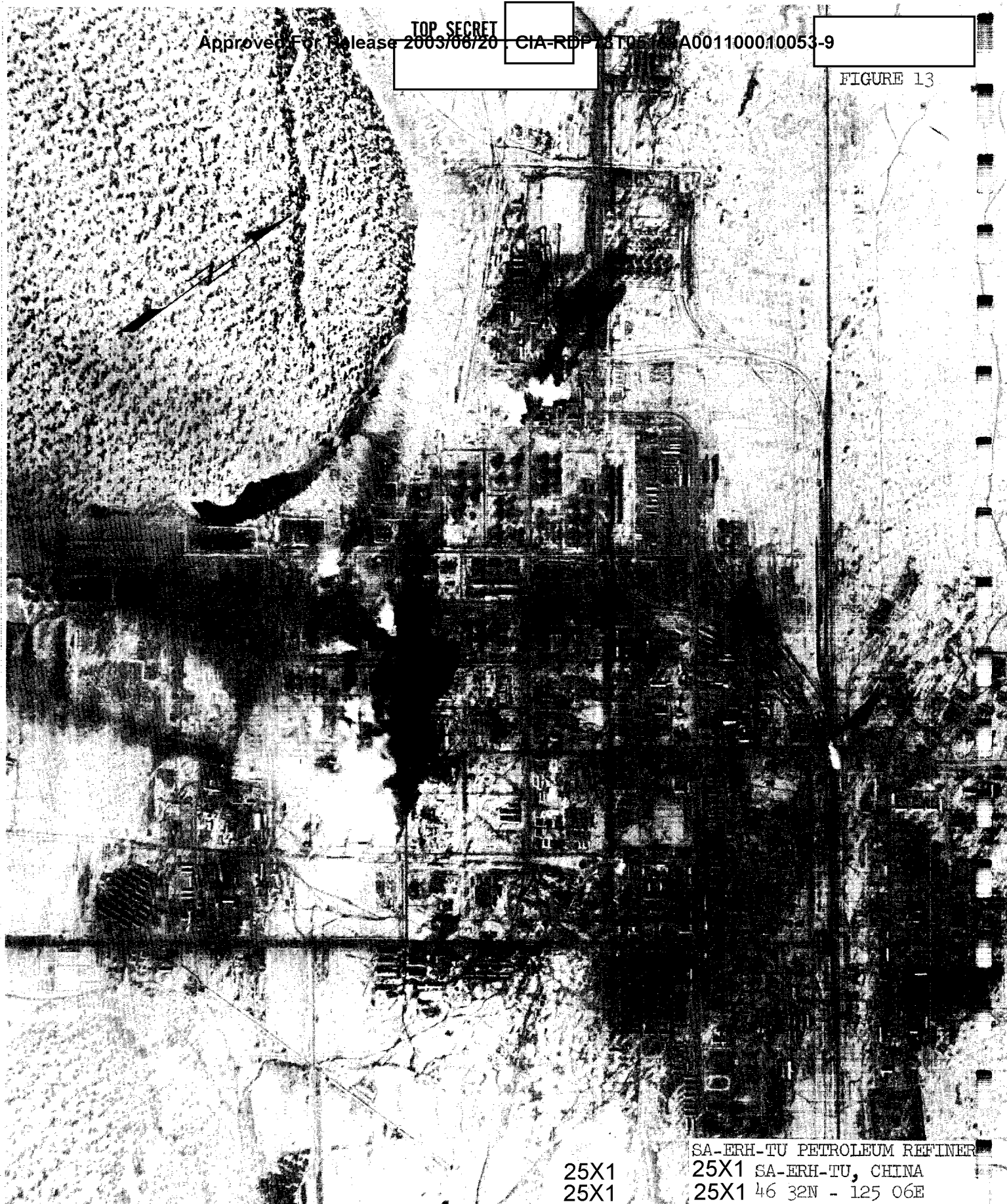


All measurements were made by the NPIC Technical Intelligence Division and are considered to be accurate to within + 10 feet

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FIGURE 13



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SA-ERH-TU PETROLEUM REFINERY  
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25X1 46 32N - 125 06E



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FIGURE 14

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SA-ERH-TU PETROLEUM REFINERY  
SA-ERH-TU, CHINA  
46 32N - 125 06E

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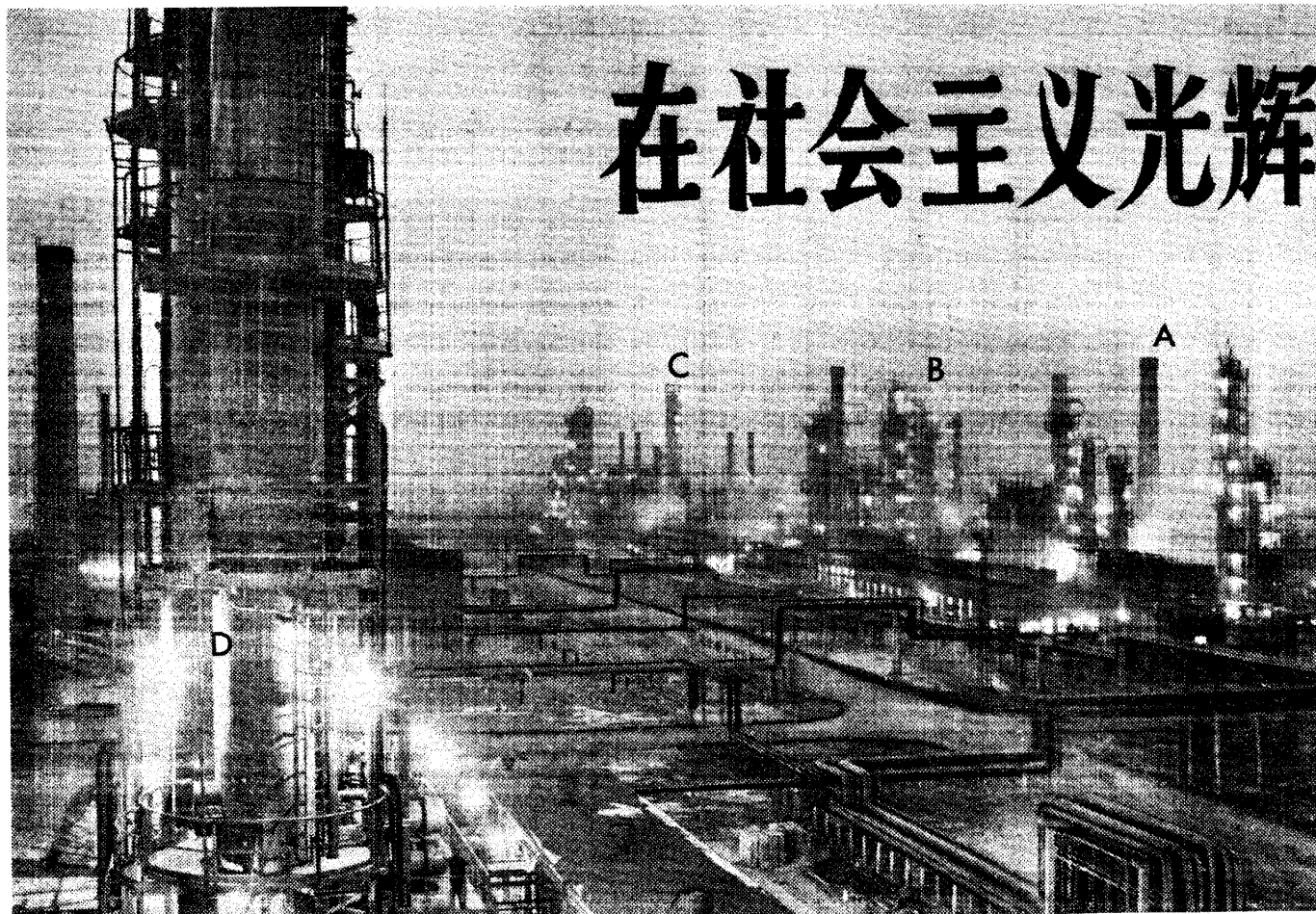
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FIGURE 15

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Figure 15 Refining Area \*

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- (A) Probable multi-stage distillation unit
- (B) Probable thermal cracking unit
- (C) Probable atmospheric-vacuum distillation unit
- (D) Unidentified refining unit no. 2

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FIGURES 16 - 17

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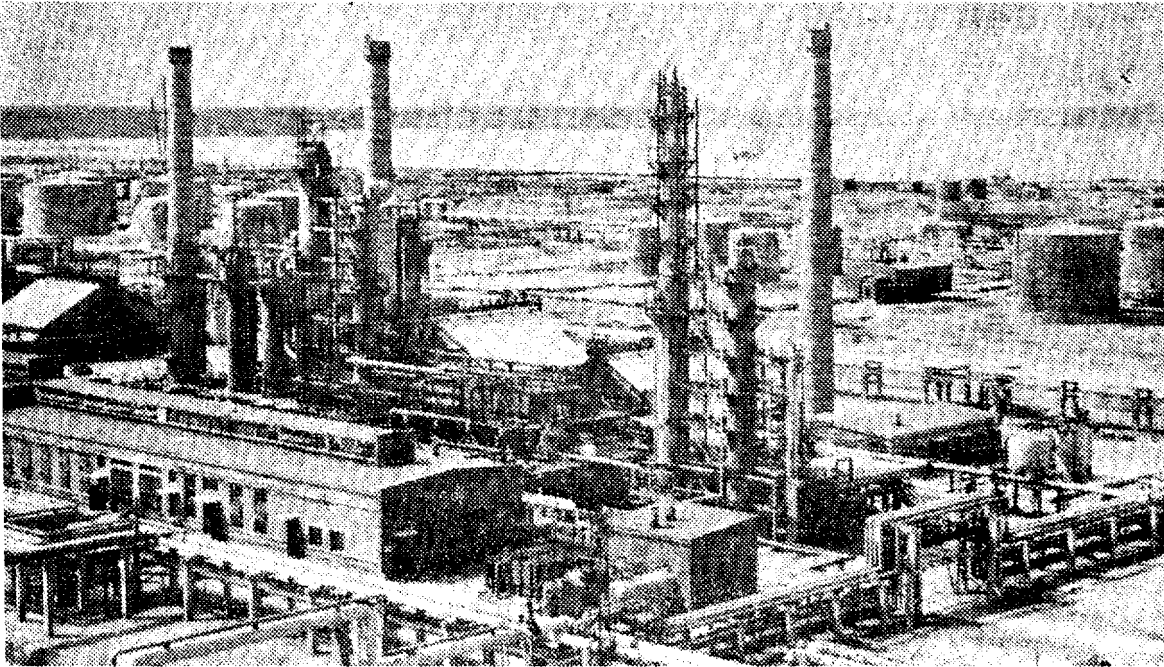


Figure 16. Probable multi-stage distillation unit \*

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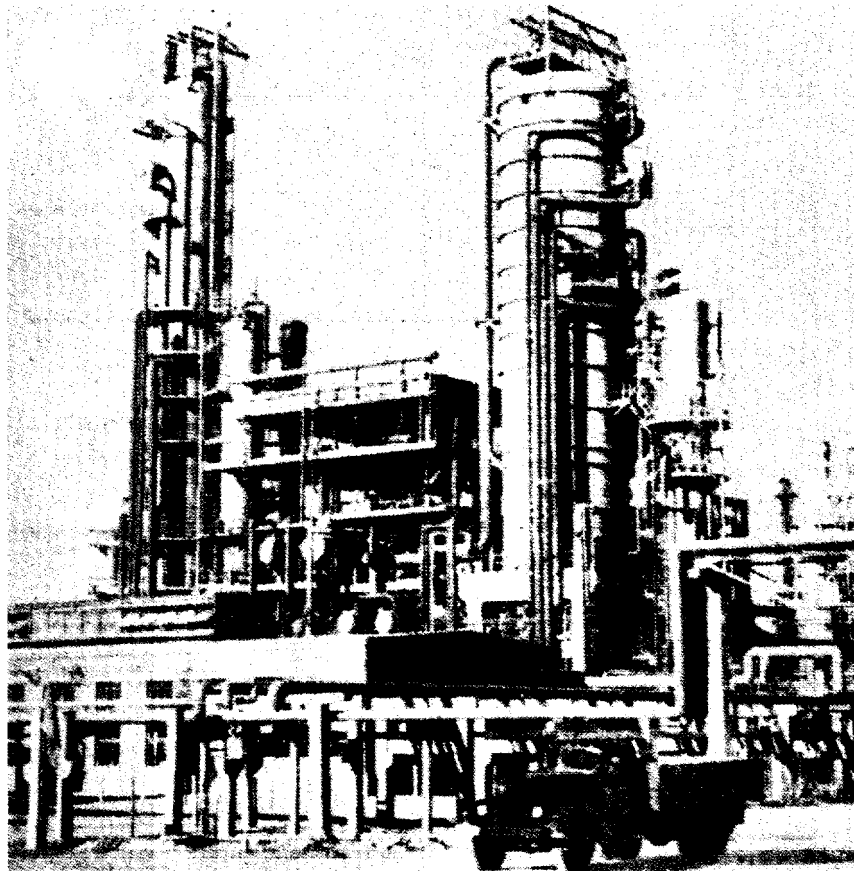


Figure 17. Probable atmospheric-vacuum distillation unit \*\*

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